

**REVIEW REPORT**  
**of the**  
**INDUSTRIAL LIAISON OFFICE**

**24 May 1994**

## Table of Contents

1.	Background . . . . .	3
2.	External Environment . . . . .	3
3.	Current Activities of the Industrial Liaison Office. . . . .	5
4.	University Strategic Direction . . . . .	6
5.	Mandate . . . . .	7
6.	Functions . . . . .	8
7.	Environment for Contract Research . . . . .	9
a.	Recognition of Industrial Research . . . . .	10
b.	Integration Between Industrial Liaison Office, Faculties, School of Graduate Studies and Other Sectors of the University: . . . . .	10
c.	Acquisition and Distribution of Overhead Monies . . . . .	11
d.	Space Concerns . . . . .	12
8.	Administrative Structures . . . . .	12
a.	Centrality . . . . .	12
b.	Reporting Structure . . . . .	12
c.	Human Resources . . . . .	13
d.	Financial Resources . . . . .	13
e.	Contract Research Policy . . . . .	13
9.	Conclusion . . . . .	14
	SUMMARY OF RECOMMENDATIONS . . . . .	16
	APPENDICES . . . . .	19
	Appendix I - List of Interviews . . . . .	19
	Appendix II - Statistics on Research . . . . .	20
	Appendix III - External Consultants Reports . . . . .	25

## **EVALUATION REPORT - OFFICE OF INDUSTRIAL LIAISON**

### **1. Background**

In 1988 a consortium UQAM-R&D-CONCORDIA was established jointly by Concordia and the University of Quebec at Montreal to broaden the linkages between the researchers of the two universities and industry. It was initially funded with a two-year grant from the National Research Council (NRC). At the end of that time, the consortium was disbanded with each university going on its own. Concordia created its own Industrial Liaison Office (ILO) with a full time Director and a full time Assistant reporting to the Director of the Office of Research Services (ORS). The University Provisional Operating Budget Document for 1990-1991 has a line item for the Industrial Liaison Office that states:

"With the winding up of the UQAM-R&D-CONCORDIA because of the cessation of external funding, it has become urgent for Concordia to establish its own Industrial Liaison Office. The potential for an increase in contract research activities is enormous, particularly for a university with so many links to local industries. Moreover, the Office should be able to pay for itself through increases in the overhead revenues generated by the activities. An amount of \$0.075M will be provided to Research Services to establish the Industrial Liaison Office. The net new cost will be nil, however, since this amount will be offset by an equivalent sum provided to the unit from contract research overhead revenues."

The Office was established and Mr. R. Prud'Homme was appointed its Director.

In late 1993, as part of the periodic appraisal process, a review committee was established to review the Office. Two external appraisers were invited to participate and their reports are attached in Appendix III.

The Committee has met 14 times; solicited input from the University community; met with the Deans (or their representatives); the Rector and the Vice Rectors. A list of those submitting written reports and those interviewed is attached in Appendix I. The results of the Committee's review are presented here.

### **2. External Environment**

The funding of research in universities has evolved considerably in the last decade and in particular, over the last few years. Granting councils have set up more and more research programmes for which the participation of an industrial partner in a research project is a prerequisite. Any additional funding given by the federal government to the granting councils over the last five years has been dedicated to university-industry programs. Examples of this are the Networks of Centres of Excellence Program, the NSERC Industrial Chair, and the R&D Cooperative Programs.

Other recent changes in the allocation of research funds, such as the funding of the collaborative research initiatives at NSERC and the international collaborative research program at SSHRC, also provide a basis for the fear that the cost of establishing new programs (or expanding existing ones) will result in the cutting back of other programs especially traditional operating research grants and scholarships. In fact the 1994-1995 provisional budget for NSERC including the Networks of Centres of Excellence is being cut by more than 21 million dollars compared to the 1993-1994 budget. Table 1 shows the percentage of total R&D funding to Québec Universities by source and year. The funding from the Federal Government as a percentage of the total research funding to Québec universities drops significantly over the past few years while the funding from the private sector increases proportionally.

Table 1 - Percentage of Total Research Funding to Québec Universities by Source and Year (for further details, see Appendix II)

Year	Federal	Provincial	Other
1970-1971	67.7	17.7	14.6
1980-1981	53.0	22.0	25.0
1990-1991	44.3	23.5	32.2
1992-1993	35.1	19.7	45.2

The external assessment report by Denis Beaudry of École Polytechnique lists many R&D funding sources at the provincial level in which this industrial-university link is crucial: The SYNERGIE Program, the Projets mobilisateurs (Fonds de développement technologique), the Projets fonds de développement technologique de la recherche environnementale, the R&D tax incentives.

The Beaudry Report also mentions research programs within the government departments at the federal level - the Departments of Energy, Mines and Resources, Communications, Transport, Environment, National Defense, the Canadian Space Agency, and the National Research Council as well as the Ministères des Transports, de l'Environnement, de l'Énergie et des Ressources, de l'Industrie, du Commerce, de la Science et de la Technologie at the provincial level. The Quebec government also funds research through technology transfer centres such as CRIM, CRIQ, CQVB, CERCA, CEFRIO.

In order for the University to fulfil its mission, to provide for intellectual growth and to provide funds for increasing the number of graduate students and modern equipment, it is essential that the University gain access to the funding from the private sector, the government departments as well as through technology transfer centres. Concordia will increasingly have to conduct its R&D in collaboration with industry, business and governments.

The key factor in developing the best linkage for the University with these sectors is its faculty. Areas such as contract administration, investing time in proposal solicitation, public relations, and administrative record keeping are a burden and detraction to faculty who must engage in teaching, research and community service. While the principal investigator has the ultimate responsibility in these areas, administrative support services and effective tools help greatly. It is necessary to have a dedicated group to provide such services. A group which is seen by the internal and external community as having a presence and recognition in the University above that of a single individual is essential. Hence an Industrial Liaison Office is needed.

**RECOMMENDATION 1.** In view of the increasing importance of Industrial Liaison, and the need for a dedicated unit to support such activities, the Industrial Liaison Office of Concordia University should be retained.

### **3. Current Activities of the Industrial Liaison Office.**

Concordia's industrial liaison track record over the past few years is weak, even taking into account the economic problems caused by the current recession. In 1991-1992, Concordia's researchers brought in a total of \$1.3M from the private sector compared with \$7.8M by École Polytechnique, \$8.0M by UQAM, and \$10.8M by Sherbrooke. UQAC, which is much smaller than Concordia, also received \$2.8M from the private sector and industry (see Appendix II). In the case of Concordia, the overhead revenue generated by research contracts to the University dropped from \$354,658 in 1989-1990, the year before the Office was created to merely \$165,631.72 in 1993.

By contrast, other research activity and conventional grants in Concordia are much more comparable to other universities. In 1991-1992, according to SIRU (Système d'informatisation sur la recherche universitaire), Concordia received \$13.1M in grants compared with \$14.6M by École Polytechnique, \$16.5M by UQAM, and \$19.3M by the University of Sherbrooke. (Note that Sherbrooke has the Faculty of Medicine which brings in research funding in the health sciences areas).

Overall, the Committee has determined that the opportunities for significant growth in conventional grants is limited; and that Concordia's performance with the private sector and industry leaves much to be desired. Even when the recession and other factors are taken into account it would appear that Concordia may not be earning its fair share of the R&D contract money available from the private sector and industry.

In reviewing the operation of the Office, the Committee has identified several weaknesses in the current operation. These include (but are not limited to) the following:

- a. There has been an apparent lack of planning in the Office, with initiatives being undertaken on a seemingly random basis, perhaps guided by perceived opportunities.
- b. The interpretation of the mandate by the Industrial Liaison Office is too unfocused. Appendix 4 of the Self-Appraisal Document (SAD) lists 32 items as major functions performed by the Director and the Assistant. These are too many tasks for two people, especially when they are not prioritized and are so diffuse.
- c. The policies of Concordia University in regard to the distribution of overhead funds do not motivate faculty members to undertake such work.
- d. The Industrial Liaison Office has not been successful in changing the climate of the University to encourage industry-oriented research.
- e. There appear to have been conflicts between the Industrial Liaison Office and faculty, other researchers, various other units, and the Director of the Office of Research Services which have been detrimental to effective operation of the Industrial Liaison Office.

To develop strategies for the University to take advantage of the current funding situation particularly from the industrial and private sectors, it is essential that the mandate of the Office be refocused and the atmosphere surrounding contract research and the Industrial Liaison Office be improved.

#### **4. University Strategic Direction**

Success in industrial liaison efforts requires a coherent strategy; one that effectively matches our technical competencies with expanding industrial needs. At the present time some researchers and research centres appear to have such strategies. As a result of some recent appraisals, Faculties are also beginning to develop in this direction, but it is not, however, clear that Concordia has a University-wide strategic plan. Questions about how can we successfully differentiate ourselves from other universities (e.g., École Polytechnique, UQAM) have been raised, but there is no consensus on specific strategic directions. Similarly, questions about whether we should focus on the Quebec, Canadian, U.S. or other international markets have been raised but not resolved.

This strategic drift cannot be solved by the Industrial Liaison Office alone. Rather the development of a strategic planning process which includes Faculties, Departments, the School of Graduate Studies, research centres, etc. must be initiated by the Office of the Vice Rector, Academic. Awareness of industrial opportunities is often known by faculty members throughout the University but this intelligence is not coordinated. The strategic planning process must draw out this knowledge in building a consensus on the strategic direction of the Industrial Liaison Office and industrial liaison activities in general. Specific areas to be considered include

industrial and NSERC chairs, work in the municipal and transportation infrastructure (in light of current government policy), information technology, space technology.

**RECOMMENDATION 2.** The University's strategic planning must include the Industrial Liaison Office activities. The Industrial Liaison Office should provide input to, and be aware of, strategic planning done in the University and its relevant sectors, including all Faculties and the School of Graduate Studies. It is important, however, that Industrial Liaison Office planning (with the input of faculty members) should be refocussed immediately.

## **5. Mandate**

In order for Concordia to continue to develop its research capacity in every possible manner, it is essential that strong linkages be forged between Concordia's research community and the industrial and private sectors of the economy. The role of the Industrial Liaison Office should be to establish, facilitate and negotiate such linkages.

**RECOMMENDATION 3.** The Industrial Liaison Office be given the mandate to:

- work with the faculty members to establish and communicate strategies and policies for linkages and research contracts with the private and government sectors.
- identify areas of broad research strengths within Concordia's research community by focusing on the strengths of current faculty and research centres and identifying teams who are able and willing to engage in contract research. [The Committee was made aware of a recent report about research activity at Concordia prepared by the new Director of ORS. This report could form a basis for this identification.]
- develop contacts with industry and identify potential research projects that match the capabilities and interests of Concordia's researchers and communicate them to such researchers.
- work with the Senior Administration and CUFA to promote the idea of research contracts as a means to enhance faculty research profiles.
- provide support to faculty in contract formulation, administration, negotiation and all related legal matters.
- develop contacts to assist in securing industrial chairs.
- act as a bridge to the outside industrial, business and government community to promote Concordia in the domain of contract research.

## 6. Functions

As mentioned above, there are 32 functions listed in the Self Appraisal Document of the Office. These broadly fall into five categories:

- Contract R&D support
- Industrial Partnerships and joint ventures
- Public Relations
- License Agreements
- Patents

In practice the first two functions are the *raison d'être* for the Industrial Liaison Office, working with faculty in a joint role. The last two items should, at the present stage of development of contract research at Concordia, be minor activities. They may serve to detract from the major needs for the Industrial Liaison Office at the present time.

With respect to Patenting and Licensing where such patents come from both industry and non-industry research, one of the external evaluators has pointed out that most universities have found this operation very time consuming and costly. The external evaluator strongly recommends, and the Committee concurs that:

**RECOMMENDATION 4.** The functions of License Agreements and Patents be reassigned outside the Industrial Liaison Office to the Office of Research Services.

With respect to Public Relations, the Industrial Liaison Office Director has to be present and active in the external R&D community and also be available for consultation and meetings inside the University. Given the limited resources of the Industrial Liaison Office at the present time, such activities must be results-oriented and well focused. This has apparently not been the case in the past because the Director has been asked by University officers to serve in ways unrelated to the primary mission. Therefore the Committee recommends that:

**RECOMMENDATION 5.** The Director of Industrial Liaison Office limit public relation activities to those which are directly related to its mandate.

The Committee was made aware of situations at other universities where the "team" involved in high level university-industry meetings included members of the Senior Administration and even members of the Board of Governors. In contrast, at Concordia, it was the Director of the ILO, who was too frequently delegated to represent the University at such meetings putting us at a disadvantage.

**RECOMMENDATION 6.** The importance to the University of university-industry activity be demonstrated by the involvement of senior officers and Board members.



## **7. Environment for Contract Research**

During the review process, two excellent models of productive industrial liaison were presented and discussed. Both emphasized collaboration, incentives and shared goals among the participants at all levels of the University, in industrial liaison and contract research. Such a climate is vital for the healthy growth of contract research at Concordia.

Industrial liaison in its totality demonstrates itself in the several modes. In place now, or being developed, at the faculty members level and by the Industrial Liaison Office are the following:

- Contacts and associations at the higher technical and managerial levels of industry, business and government;
- Contacts at the level of active research and technical development;
- Contacts at the liaison and marketing level;
- Contacts as productive spinoffs from the teaching of specialized courses by experts and professionals from industry, business and government;
- Contacts through professional society participation;
- Contacts through participation in community affairs.

These activities embrace the contacts by individual faculty members, the Associate Vice-Rector, Academic (Research), technical staff, research teams, research centres, academic units, members of decanal teams, senior university administrative officers, and members of the Board of Governors. The hearings of the Industrial Liaison Office Review Committee have shown that it is important for the Industrial Liaison Office to have a complete awareness of these interactions. The role of the Industrial Liaison Office is to be instrumental in documenting and communicating this information as well as seeing that opportunities are appropriately pursued. However it is crucial that the Industrial Liaison Office must have the wisdom to know where and how to assist and when to leave industry-faculty contact alone to thrive, with appreciative acknowledgment. The collective vision of the importance of this process and of the role of its component parts must be promulgated and appreciated by all.

One of the major goals of an effective liaison process is the generation of specific short and long term research, development and professional activities with, and for possible partners in industry, business and government. The evaluation and development of a positive climate for this activity at Concordia should always answer the scrutiny as to what helps and what hinders, what encourages and what constrains. The Committee notes, however, that an emphasis on volume alone would be short-sighted.

### **a. Recognition of Industrial Research**

The review interviews emphasized the importance of a more enlightened outlook on industrial research contracts, by members of the university community at every level. For example, various comments by the interviewees suggested that contract research is sometimes viewed as too proscriptive, restrictive and time-consuming. The Administration, the Industrial Liaison Office, the Faculties etc. must develop a genuine appreciation of the effort it takes to bring in research contracts, to conduct them successfully and within budget, to involve graduate and undergraduate students in a meaningful way, and to carry on a smooth and successful liaison both internally and with the sponsors in industry, business and government.

The present Director of the Industrial Liaison Office, outside consultants, and persons interviewed, indicate that the effort to carry a research contract to completion is often substantially more demanding than the analogous efforts expended in a grant research project. Yet it is not generally accepted that this level of commitment is required to bring about desirable opportunities for students, faculty, departments, research centres and the University in terms of improved favourable publicity, contracts and augmentation of research resources and most importantly, advancement of knowledge and contribution to society. When contract research opportunities are a natural extension of the work already in hand, when they represent new opportunities in allied fields, or new opportunities for team collaboration, then they begin to foster an ideal setting for long-term growth and development and should be encouraged.

**RECOMMENDATION 7.** Appropriate criteria be developed to ensure the proper recognition of contract research, analogous to the procedures already used for evaluating other research in performance evaluation and similar exercises. Faculty should be encouraged to participate by recognising such research for tenure and promotion considerations. Research experience in industry, business and government should be considered in the process of hiring new faculty.

### **b. Integration Between Industrial Liaison Office, Faculties, School of Graduate Studies and Other Sectors of the University**

Throughout the review, the Committee repeatedly noted a lack of interaction between the Industrial Liaison Office and faculty members. Sometimes this manifested itself in a general absence of knowledge by faculty members and research teams about Industrial Liaison Office activities and functions. In other cases, there appeared to be a lack of accord and mutual understanding between faculty members and the Industrial Liaison Office. Success in industrial liaison activities requires better informational linkages, as well as mutual confidence and trust among all concerned.

**RECOMMENDATION 8.** To facilitate ILO-faculty linkages the Committee recommends the establishment of a University-Industrial Liaison Committee. This committee should include key faculty members, academic administrators [e.g. Dean of Engineering, the Associate Vice-Rector, Academic (Research)] and the Director of the Industrial Liaison

Office. This Committee should address strategic issues, act as an information conduit between the Industrial Liaison Office and faculty members, provide the Industrial Liaison Office with advice on tactics and priorities for each University sector. This body should help increase the focus in the University and centrality of liaison efforts in various Faculties. A representative should have the responsibility to promote this activity with one's Faculty/Department.

**RECOMMENDATION 9.** The Committee suggests some or all of the following:

1. A "visiting appointment" to the Industrial Liaison Office; this appointment to be filled on a rotating basis among Faculties. Faculty Deans should consider making a six-month to one year appointment of a faculty member who already has had research linkages with industry, business and government. This requires a full-time commitment to establish productive partnerships between Faculty researchers and industrial, business and government clients. The outcome should be a more productive and continuing relationship between that faculty member and the Industrial Liaison Office.
2. The assignment of formal liaison responsibilities within each Faculty and the School of Graduate Studies. If such activities are important, and we believe they are, then this must become an integral function of the Faculties. In order to facilitate such development someone within each Faculty (or where appropriate in each Department) must have the responsibility to promote liaison with industry and the private sectors.

**c. Acquisition and Distribution of Overhead Monies**

The successful models of Industrial Liaison Offices that have been examined appear to have a constructive and collective approach to the acquisition and distribution of overhead funds; i.e. one which encourages contract research.

Almost all researchers interviewed projected a disenchantment with the present overhead acquisition and distribution policy of Concordia University. They felt that, although they were extending themselves to bring contract research money to the University, they were getting minimal benefit and recognition for it. There is also a perception that the current overhead rate may be too high for Concordia to be competitive with other universities.

Although the other Industrial Liaison Office models examined by the Review Committee may differ somewhat in the detail of their formula for the distribution of overhead monies, they all appear to ensure that a larger proportion of the overhead money reverts to researchers. Such policies are more likely to motivate the research base that has generated the contract research funding. Important to this process is the recognition as to how and by whom this funding is generated.

**RECOMMENDATION 10.** The policy of Concordia University with respect to the distribution of overhead funds generated by research contracts be re-examined to arrive at the following sharing arrangement:

- 30% Administration (specifically to include provision for the cost of the Industrial Liaison Office)
- 10% Vice Rector, Academic
- 30% Faculty & Department
- 30% Researcher

It is to be understood that these funds are only to be spent to improve the infrastructure for research in terms of equipment, other facilities, staff development etc. Indeed it will be necessary to ensure through policy and guidelines, that researchers should clearly know how such funds may be spent.

#### **d. Space Concerns**

Another common observation made to the Review Committee was the need for clear mechanisms to provide space for contract research. At present all contract research is done within existing facilities. Expansion of contract research will frequently require additional space and some modality must be provided to deal with this reality. This is not unusual and the cost of space is often built into contract research proposals. It would appear that Concordia is not currently able to handle such needs and a modification of the policy on contract research may be needed (see Recommendation 15).

### **8. Administrative Structures**

#### **a. Centrality**

The Review Committee examined the administrative structure of the Industrial Liaison Office. While there may be some merit to Faculty based ILO units, the Committee supports a strong central office. It does not believe that Concordia can, or should, support multiple ILO offices.

**RECOMMENDATION 11.** The University maintain its central Industrial Liaison Office.

#### **b. Reporting Structure**

The Review Committee believes that, because of its interaction with the other components of the Office of Research Services, the size of the Industrial Liaison Office, economies of scale, the current still primitive stage of development, the Industrial Liaison Office should continue to report to the Director of Research Services.

**RECOMMENDATION 12.** The Industrial Liaison Office Director should continue to report to the Office of Research Services Director.

**c. Human Resources**

The human resources available for the Industrial Liaison Office are the minimum possible. They should be increased if Concordia is really committed to contract research. However the Review Committee recognizes that the present low level of contract research and the University's overall financial situation make it hard to recommend additional resources at this time. Nonetheless, it would appear that the Office should have at least one additional professional staff member.

**RECOMMENDATION 13.** The addition of one staff member contingent on a substantial increase in contract overhead funding, and appropriate redistribution of overhead monies to pay for these needed resources.

**d. Financial Resources**

The Industrial Liaison Office should be self-financing from contract overhead funds, as originally planned. This would require approximately \$500,000 of overhead for the current level of expenditure. The Review Committee recognizes that this is not possible at present. However, it recommends that, when the allocation of overhead is decided upon, the Industrial Liaison Office situation be recognized and that a method be provided whereby the efforts of the Industrial Liaison Office to get additional contracts are recognized in the future growth of the Office. Space and other resources should be appropriate to the level of operation.

**RECOMMENDATION 14.** In the long run the Industrial Liaison Office should be self sustaining from contract research overhead funds.

**e. Contract Research Policy**

The Committee recommends that the Office of the Vice-Rector, Academic review and reformulate the Concordia Policy on Contract Research, to be approved by the Senate and the Board of Governors. It is felt strongly that certain sections of the current policy are out of date, and out of touch with the reality of today's contract research environment. Concerns about the method of sharing overhead monies, space, and the interpretation of the fifty-two day limit, amongst others, have arisen in the course of the review.

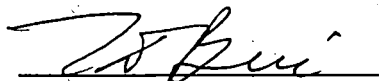
**RECOMMENDATION 15.** The Office of the Vice-Rector, Academic should establish a date-limited task force to review the current policy on contract research to report back no later than December 31, 1994.

## **9. Conclusion**

Conventional sources of research funding would appear to have reached a plateau, while sources for contract research are increasing. In order to enhance research activity at Concordia it is vitally important to develop joint research with industry, government and the private sectors. An effective, focused Industrial Liaison Office with support from the academic community can be an important part of this mission.

The Review Committee feels that contract research is absolutely essential to the future development of Concordia and must be affirmed and encouraged. If necessary, the University must take an investment perspective in the funding and support of such contract research. In particular, the Committee concludes that all efforts on the part of faculty in such an undertaking should be supported and recognized. It has made several recommendations in that regard. The Review Committee feels that there is no barrier to future growth of contract research at Concordia that cannot be removed. A revitalised Industrial Liaison Office has a very important role to play in this important endeavour. We recommend that Concordia retain the Industrial Liaison Office and enable its optimal functioning by all appropriate mechanisms.

Respectfully submitted:



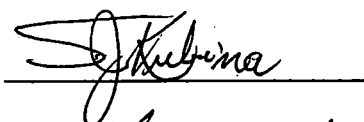
Dr. Tien D. Bui, Assoc. Vice Rector, Research,  
Chair



Dr. David Cheeke, Chair, Department of Physics,  
Faculty of Arts and Science



Assoc. Prof. Andrew Dutkewych, Chair, Depart-  
ment of Sculpture & Ceramics, Faculty of Fine Arts



Dr. Stanley Kubina, Assoc. Dean, Faculty of  
Engineering and Computer Science



Dr. Martin Kusy, Dean, School of Graduate Studies



Assoc. Prof. Graham Martin, Principal, Institute for  
Co-operative Education



Dr. Bruce Prince, Department of Management,  
Faculty of Commerce and Administration

Ms. Audrey Williams, former Director of the ORS was a member of the Review Committee until her retirement from the University. She has participated in all the meetings of the Committee until March 25, 1994.

## **SUMMARY OF RECOMMENDATIONS**

**RECOMMENDATION 1.** In view of the increasing importance of Industrial Liaison, and the need for a dedicated unit to support such activities, the Industrial Liaison Office of Concordia University should be retained.

**RECOMMENDATION 2.** The University's strategic planning must include the Industrial Liaison Office activities. The Industrial Liaison Office should provide input to, and be aware of, strategic planning done in the University and its relevant sectors, including all Faculties and the School of Graduate Studies. It is important, however, that Industrial Liaison Office planning (with the input of faculty members) should be refocussed immediately.

**RECOMMENDATION 3.** The Industrial Liaison Office be given the mandate to:

- work with the faculty members to establish and communicate strategies and policies for linkages and research contracts with the private and government sectors.
- identify areas of broad research strengths within Concordia's research community by focusing on the strengths of current faculty and research centres and identifying teams who are able and willing to engage in contract research. [The Committee was made aware of a recent report about research activity at Concordia prepared by the new Director of ORS. This report could form a basis for this identification.]
- develop contacts with industry and identify potential research projects that match the capabilities and interests of Concordia's researchers and communicate them to such researchers.
- work with the Senior Administration and CUFA to promote the idea of research contracts as a means to enhance faculty research profiles.
- provide support to faculty in contract formulation, administration, negotiation and all related legal matters.
- develop contacts to assist in securing industrial chairs.
- act as a bridge to the outside industrial, business and government community to promote Concordia in the domain of contract research.

**RECOMMENDATION 4.** The functions of License Agreements and Patents be reassigned outside the Industrial Liaison Office to the Office of Research Services.



RECOMMENDATION 5. The Director of Industrial Liaison Office limit public relation activities to those which are directly related to its mandate.

RECOMMENDATION 6. The importance to the University of university-industry activity be demonstrated by the involvement of senior officers and Board members.

RECOMMENDATION 7. Appropriate criteria be developed to ensure the proper recognition of contract research, analogous to the procedures already used for evaluating other research in performance evaluation and similar exercises. Faculty should be encouraged to participate by recognising such research for tenure and promotion considerations. Research experience in industry, business and government should be considered in the process of hiring new faculty.

RECOMMENDATION 8. To facilitate ILO-faculty linkages the Committee recommends the establishment of a University-Industrial Liaison Committee. This committee should include key faculty members, academic administrators [e.g. Dean of Engineering, the Associate Vice-Rector, Academic (Research)] and the Director of the Industrial Liaison Office. This Committee should address strategic issues, act as an information conduit between the Industrial Liaison Office and faculty members, provide the Industrial Liaison Office with advice on tactics and priorities for each University sector. This body should help increase the focus in the University and centrality of liaison efforts in various Faculties. A representative should have the responsibility to promote this activity with one's Faculty/Department.

RECOMMENDATION 9. The Committee suggests some or all of the following:

1. A "visiting appointment" to the Industrial Liaison Office; this appointment to be filled on a rotating basis among Faculties. Faculty Deans should consider making a six-month to one year appointment of a faculty member who already has had research linkages with industry, business and government. This requires a full-time commitment to establish productive partnerships between Faculty researchers and industrial, business and government clients. The outcome should be a more productive and continuing relationship between that faculty member and the Industrial Liaison Office.
2. The assignment of formal liaison responsibilities within each Faculty and the School of Graduate Studies. If such activities are important, and we believe they are, then this must become an integral function of the Faculties. In order to facilitate such development someone within each Faculty (or where appropriate in each Department) must have the responsibility to promote liaison with industry and the private sectors.

RECOMMENDATION 10. The policy of Concordia University with respect to the distribution of overhead funds generated by research contracts be re-examined to arrive at the following sharing arrangement:

- 30% Administration (specifically to include provision for the cost of the Industrial Liaison Office)
- 10% Vice Rector, Academic
- 30% Faculty & Department
- 30% Researcher

RECOMMENDATION 11. The University maintain its central Industrial Liaison Office.

RECOMMENDATION 12. The Industrial Liaison Office Director should continue to report to the Office of Research Services Director.

RECOMMENDATION 13. The addition of one staff member contingent on a substantial increase in contract overhead funding, and appropriate redistribution of overhead monies to pay for these needed resources.

RECOMMENDATION 14. In the long run the Industrial Liaison Office should be self sustaining from contract research overhead funds.

RECOMMENDATION 15. The Office of the Vice-Rector, Academic should establish a date-limited task force to review the current policy on contract research to report back no later than December 31, 1994.

## APPENDICES

### Appendix I - List of Interviews

List of people who were interviewed by the Committee:

Mr. Roch Prud'Homme, Director, Industrial Liaison Office  
Dr. Peter Bird, Vice-Dean, Research, Faculty of Arts & Science  
Dr. Ching Suen, Associate Dean, Research, Faculty of Engineering & Computer Science  
Assoc. Prof. K. Lipke, Associate Dean, Research, Faculty of Fine Arts  
Dr. Perry Anderson, Department of Biology  
Dr. Wagdi Habashi, Department of Mechanical Engineering  
Dr. Paul Fazio, Director, Centre for Building Studies  
Dr. Donat Taddeo, Dean, Faculty of Engineering & Computer Science  
Dr. U. de Brentani, Associate Dean, Research, Faculty of Commerce and Administration  
Dr. R. Le Van Mao, Department of Chemistry & Biochemistry  
Dr. R.G. Zmeureanu, Centre for Building Studies  
Dr. G. Joos, Department of Electrical & Computer Engineering  
Dr. H. Proppe, Associate Vice-Rector, Institutional Relations and Finance  
Dr. S. Sankar, Department of Mechanical Engineering/Director of CONCAVE  
Mr. Denis Beaudry, Directeur, Centre de développement technologique, École Polytechnique (External Consultant)  
Dr. R.V. Patel, Department of Electrical & Computer Engineering  
Dr. Rose Sheinin, Vice-Rector, Academic  
Mr. François Carreau, Doyen, Faculté des Études Supérieures et à la recherche, UQAM  
Dr. Patrick Kenniff, Rector & Vice-Chancellor  
Dr. Jack Lightstone, former Associate Vice-Rector, Research

List of people who submitted a written submission:

Dr. V.S. Hoa, Department of Mechanical Engineering  
Dr. R. Le Van Mao, Department of Chemistry and Biochemistry  
Dr. R. Sheinin, Vice-Rector, Academic

**Appendix II**  
**Statistics on Research**

TABLEAU 1

**Financement de la recherche selon les diverses sources de financement (1991-1992)**  
 (000 000 \$)

Établissements	Fédéral	Provincial	Privé	Inst. d'ens.	Para- public	Étranger	TOTAL
McGill	71,7	27,0	48,2	1,3	2,7	11,7	162,6
Montréal	44,2	28,8	50,5	6,5	3,0	5,0	138,0
Laval	37,2	26,9	38,8	3,3	3,3	2,0	111,4
Sherbrooke	12,5	6,8	9,2	1,2	1,6	0,4	31,6
UQAM	10,1	6,4	6,1	3,5	1,9	0,1	28,1
INRS	8,0	2,3	11,3	0,3	2,1	0,1	24,1
Polytechnique	9,9	4,7	5,8	0,1	2,0	0,2	22,7
Concordia	8,9	4,2	1,0	1,2	0,3	0,3	15,9
UQTR	2,9	2,3	2,3	1,2	0,2	--	8,9
UQAC	2,1	1,5	2,0	0,5	0,8	--	6,9
IAF	1,7	1,7	1,3	0,2	0,5	0,2	5,6
HÉC	0,9	0,8	1,0	1,3	0,1	0,08	4,2
UQAR	0,9	0,5	1,1	0,5	0,1	--	3,2
ÉTS	0,3	0,2	1,0	0,4	0,06	0,3	2,2
UQAT	0,4	0,4	0,2	0,2	--	--	1,2
UQAH	0,5	0,1	--	0,3	0,05	--	1,0
TÉLUQ	0,2	0,07	--	0,09	--	0,4	0,7
ÉNAP	0,03	0,1	--	0,1	--	--	0,3
Bishop's	0,08	0,04	0,02	--	--	--	0,1
TOTAL	212,2	114,7	180,1	22,2	18,8	20,8	568,7

Source : Tableaux de données statistiques: 1991-1992, SIRU, Système d'information sur la recherche universitaire, Direction générale de l'enseignement et de la recherche universitaires, MESS, mars 1993.

## RECHERCHE UNIVERSITAIRE

## QUÉBEC

**% par sources de financement**  
*(Variations depuis 30 ans)*

<i>Sources</i>	<i>Année</i>	<i>Fédéral</i>	<i>Québec</i>	<i>Autres</i>	
<i>1</i>	60-61	<b>60,5</b>	<b>1,5</b>	<b>38,0</b>	<b>2,4</b> (millions)
<i>1</i>	70-71	<b>67,6</b>	<b>17,7</b>	<b>14,6</b>	
<i>1</i>	80-81	<b>53,0</b>	<b>22,0</b>	<b>25,0</b>	
<i>2</i>	90-91	<b>44,3</b>	<b>23,5</b>	<b>32,2</b>	
<i>2</i>	92-93	<b>35,1</b>	<b>19,7</b>	<b>45,2</b>	<b>646</b> (millions)

*Source 1: Statistique Canada, Avril 1990*

*Source 2 : Ministère de l'Éducation, Système d'information sur la recherche universitaire (SIRU),  
5 avril 1994*



*Conseil de la science et de la technologie, Avril 1994*

**RECHERCHE UNIVERSITAIRE****QUÉBEC****Subventions et contrats***(millions de dollars)*

<b>Année</b>	<b>Fédéral</b>	<b>Québec</b>	<b>Université</b>	<b>Privé</b>	<b>Autres</b>	<b>Total</b>
90-91	<b>202</b>	<b>107</b>	<b>23</b>	<b>87</b>	<b>37</b>	<b>= 456</b>
91-92	<b>212</b>	<b>115</b>	<b>22</b>	<b>179</b>	<b>40</b>	<b>= 568</b>
92-93	<b>227</b>	<b>127</b>	<b>22</b>	<b>227</b>	<b>43</b>	<b>= 646</b>

*Source : Ministère de l'Éducation, Système d'information sur la recherche universitaire (SIRU),  
5 avril 1994*



*Conseil de la science et de la technologie, Avril 1994*

**RECHERCHE UNIVERSITAIRE****QUÉBEC****% par sources de financement**

<b>Année</b>	<b>Fédéral</b>	<b>Québec</b>	<b>Université</b>	<b>Privé</b>	<b>Autres</b>	<b>Total</b>
90-91	<b>44,3</b>	<b>23,5</b>	<b>5,0</b>	<b>19,1</b>	<b>8,1</b>	<b>100</b>
92-93	<b>35,1</b>	<b>19,7</b>	<b>3,4</b>	<b>35,1</b>	<b>6,7</b>	<b>100</b>

*Source : Ministère de l'Éducation, Système d'information sur la recherche universitaire (SIRU),  
5 avril 1994*



**Conseil de la science et de la technologie, Avril 1994**



**Appendix III**  
**External Consultants Reports**

**INDUSTRIAL LIAISON OFFICE REVIEW**

**CONCORDIA UNIVERSITY**

**REPORT OF EXTERNAL EVALUATOR**

John P. Molloy  
Executive Director  
Parteq Research and Development Innovations  
Queen's University

January 22, 1994

recommendations have been based on the information provided through the various sources and my experience in this field.

## **MANDATE OF THE INDUSTRIAL LIAISON OFFICE**

The mission statement of the ILO is described as being to broaden and deepen the linkages between Concordia's researchers and industry (Auto-Evaluation p.3). This mission includes increasing the familiarity of both researchers and industry with each other and promoting the development and transfer of new technologies to industry.

There is a discrepancy in what most see as the role for the ILO with the justification used for the continuation of the ILO after NRC withdrew funding from the combined UQAM/Concordia office in 1989. In an internal memorandum dated November 17, 1989 from the Director of Research Services, two main objectives for the continuation of the ILO were stated:

To establish, promote and encourage University-Industry interaction by ensuring the transfer of technological know-how from the basic science to the commercialization step; and,

To exploit those inventions that might have commercial potential. This may be done through licensing or seed finance projects.

The emphasis in the above mentioned justification was on commercialization and technology transfer. The ILO clearly has not been very successful in this regard but the ILO has also clearly not had the resources to handle this function. Most people interviewed did not view commercialization/technology transfer as being the main function of the ILO.

There is a distinct lack of focus within the ILO and a lack of understanding by many of just what the ILO is supposed to do. Some view the main role to be that of increasing the industrial contract research base; others view the main role as being more of a liaison role to increase the exposure of researchers to industry and vice versa; and others view the main role as being one to foster technology transfer. In fact, the ILO as it currently operates is supposed to perform all of these functions and this is simply not realistic given the staffing and limited funding currently in place. Some clear direction as to just what the priorities and functions are is required.

## **ANALYSIS OF FUNCTIONS AND ACTIVITIES**

### Contracts

There is considerable concern regarding the decline in industrial contract research since the ILO was incorporated as a full-time internal function. There were a number of factors identified which undoubtedly contributed to this decline including the recession, the time spent by the ILO on public financing initiatives, turmoil within the University environment and continuing problems for researchers in dealing with industry within the "French milieu". It was however reported by Mr Prud'Homme that industrial contract figures for the current year look promising.

It is reasonably appreciated that most industrial contracts are initiated by the researchers undertaking the research. Very few contracts are in fact initiated by ILO staff and that is not likely to change. It is also appreciated that most industrial contracts only materialize after the industrial partner has gained considerable familiarity with and confidence in the university researcher. Increasing the level of industrial contract research is therefore a long-term exercise and it is unfair to judge the success of the ILO in this regard after a two year period. It is clear that the level of industrial funding at Concordia is low but to expect

immediate dividends from installing virtually a one-person office, with very limited funding, was not realistic.

Through the interviews I conducted I have deduced that there is a need for a considerable attitude shift within the faculty in order to promote greater industrial interaction. This goes way beyond what is perceived by some as a problem for Concordia researchers to fit into the "French milieu". It appears that industrial contracts are perceived as being too demanding, especially if the contract is relatively small in size. The benefits, as they relate to both the researcher and the University, associated with industrial contracts are not clearly understood and therefore education is required. More important than education however, is the perception that industrial research and commercialization activity is not adequately recognized by the University. This appears to be a universal problem in universities which must be addressed if Concordia wishes to see increased activity in this area, especially from junior faculty members. There has to be recognition in performance and career assessments for industrial work, innovation and time spent on commercialization activities. A related concern expressed by researchers was the lack of overhead resulting from industrial contracts actually received by their lab. A change in policy allowing a portion of the overhead to go to the Department involved may serve to provide some recognition and benefit for the researcher from pursuing industrial contracts.

The language difficulty facing many of Concordia's researchers was given as one possible explanation for the low level of industrial contract work. Research is global in scope and industrial contracts are normally pursued by industry because of a researcher's expertise or proprietary intellectual property. It appears that the ILO has not actively sought to establish industrial relationships outside Quebec and I see this as an area for improvement.

The ILO also handles administration of government contracts which is a function which does not appear to be directly related to their stated mission.

Changing the attitudes towards conducting industrial contract research and promoting this type of activity will take time and can only be expected to show positive results in the long term. This approach will of course only be successful if meaningfully supported by the University.

#### Technology Transfer/Commercialization

Although the justification to maintain the ILO on a full time basis at Concordia was very much focused on the need to promote technology transfer and commercialization, the ILO certainly did not concentrate on commercialization of intellectual property. Very little commercialization of intellectual property resulting from research at Concordia actually has taken place and many of those I interviewed did not feel much intellectual property of commercial value has been developed or will be developed in the near term at Concordia.

An accepted rule of thumb for universities in North America is that you should receive approximately one invention disclosure for every \$2-\$2.5 million worth of basic research undertaken in the university. It is also recognized that a significant number of disclosures are related to bio-related disciplines. At Queen's, and I believe the same to be true for most other major universities, a considerable number of the disclosures come from research carried out in the Faculty of Medicine. With this in mind, and given the relatively small level of basic research funding at Concordia, it is unrealistic to expect a high number of invention disclosures. The current research base and funding situation therefore does not warrant a strong focus on commercialization of intellectual property.

It is, however, necessary that the University decide whether it wishes to provide the research

community with intellectual property management services. In the present climate where the need to show relevance and accountability is stressed, I feel some form of service to the research community in this regard is essential.

An agreement with Research Corporation Technologies (RCT) has been negotiated and this represents one possible means to have intellectual property assessed, protected and commercialized. RCT is however an American firm and from a purely nationalistic point of view, it may be more appropriate to try to form a relationship with the McGill Office of Technology Transfer or other such offices. In any event, some presence will be required at Concordia to provide an office which will receive disclosures, provide advice to researchers and to liaise with the technology transfer agent and the researchers.

#### Industrial Liaison

Although the above functions and activities are a form of industrial liaison, for the purposes of this report I am viewing industrial liaison as the activities which serve to increase the researchers familiarity with industry and the needs of industry and making industry familiar with the strengths and resources available to them through involvement with the University.

Concordia's effort to increase its level of interaction with industry is still in the early stages and hence this liaison and education role is critical. This does appear to be the main focus of the current ILO and considerable efforts are being directed towards increasing the exposure of both researchers and industry to each other. The effectiveness of these efforts will only become evident in the long term but the approaches taken by the ILO appear to be reasonable. The ILO should however be encouraged to broaden its area of interaction to include companies based outside Quebec.

Success in this area will depend on the level of support shown by the University administration for such activity. As discussed previously, it will be important to improve the level of recognition and reward given to those researchers who are successful in industrial activity.

## **STRUCTURE**

The main recommendation made by Mr. Prud'Homme was that the ILO be clearly separated from the Office of Research Services (ORS) and that the Director of the ILO be given more authority and independence. The ILO currently reports through the ORS but it is clear that the level of communication between the two offices needs to be improved. There also appears to be friction between the two offices which may make any structure combining the two offices difficult to establish and administer.

It is true that industrial contracts are considerably different than grants but I feel that the administration of grants and contracts are best handled through the same office in order to make maximum use of the administrative infrastructure. It is unrealistic to expect the ILO to initiate and generate a significant volume of industrial contracts. Attention should instead be focused on administration of contracts and industrial liaison. A structure wherein all grants and contracts are administered by one office is most practical and at Concordia this should obviously be the ORS.

Some discussion was focused on whether a separate not-for-profit agency (similar to Parteq or Innovations Foundation) could be formed to handle the ILO functions. Such organizations are well suited to commercialization activities but it is generally accepted that the research base and intellectual property portfolio is not sufficient at this time to justify such an independent organization.



## RECOMMENDATIONS

The following recommendations are made with full consideration of the financial constraints facing the University. No recommendations are made with respect to staffing as I do not have sufficient information to fully assess individual performance and I do not feel it within my mandate. My recommendations will focus on structure, mandate and activities.

1. I recommend that all grants, contracts and industrial liaison be the responsibility of the ORS. I recommend that industrial liaison be an integral part of the ORS and that the two (ORS and ILO) not be referred to as separate offices. I consider that the industrial background of Dr. Besso will be an asset in handling responsibility for grants, contracts and industrial liaison.
2. I recommend that the responsibility for administering government, industrial and other contracts be the responsibility of a Contracts Officer within ORS. Most industrial contracts are initiated by faculty but the person responsible for contract administration should also have the capacity to proactively seek contract work.
3. I recommend that a Director/Associate Director, Industrial Liaison be responsible for all aspects of industrial liaison relating to increasing the University's exposure with industry and industry's awareness of what Concordia has to offer. This Director should have a close working relationship with the Contracts Officer, especially as to arrangements with industry. This Director should also have a close working relationship with the University's public relations function.

4. I recommend that a person within the ORS, most probably the Director/Associate Director, Industrial Liaison or the Director of Research Services be responsible for the management of intellectual property. This role should be to give advice to the research community and to act as the receiving office for intellectual property disclosures. The research base and the disclosure rates are not sufficient at this time to dedicate significant resources to this effort but the University should provide some service capability to the research community. If both the research base and intellectual property commercialization activity increases significantly, Concordia could then consider whether this activity should be spun off into a not-for-profit or a for-profit corporation dedicated specifically to commercialization and technology transfer. The person responsible for intellectual property management should maintain active membership in the Association of University Technology Managers. The ORS should have budget allocations to support some travel, education and minor legal consultation expenses associated with this activity.
5. The University should maintain its relationship with Research Corporation Technologies but also explore possible relationships with other universities. There is increasing pressure on universities to be accountable for the research funding provided at public expense. There will therefore, in the near future, be increasing emphasis placed on using university generated technology to enhance economic and social well being for Canadians. Under such pressures it will be difficult to assign all intellectual property developed at Concordia to a foreign company, such as RCT, when Canadian alternatives exist. Relationships with other universities should be explored.
6. Although I do not recommend an office dedicated to technology transfer, I recommend that an allocation be available within the ORS budget to handle

extraordinary cases where some investment may be required in order to maintain a proprietary position on technology which may be seen to have significant scientific and/or commercial potential. There may be cases where such property is developed and RCT or a selected agent may have no interest or where there may not be sufficient time to attract interest before protection should be put in place (e.g. to beat a publication date). The University has to be perceived as being supportive of commercialization activities and has to be prepared to invest where and when appropriate. I recommend an annual reserve fund of \$15,000 - \$25,000 be established under the control of the Director, ORS. That amount may cover from one to three patent applications depending on the complexity of the cases.

7. University policy regarding intellectual property should be formalized and communicated to the University community.
8. The University has to confirm that it is committed to increased industrial interaction and develop means to convey that commitment to the researchers. I recommend the distribution of overheads from industrial contracts be revised so that the researcher or at least the researcher's Department benefits directly from the industrial contract. At Queen's the University maintains one-third of the overheads with the remainder going to the Department for distribution at the discretion of the department head. I recommend a similar distribution for Concordia.
9. The University has to make efforts to foster a climate which is conducive to increasing industrial and entrepreneurial activity. Participation in commercialization activities is time consuming for the researchers, with no guarantee of any return. The University stands to benefit in both tangible and intangible ways should University

generated technology be used commercially for the public good. The University therefore should recognize the researcher's contribution to industrial activity in career and performance assessments. Researchers have to be motivated to participate in industrial and commercialization activities by other than just the potential for financial return.

## CONCLUSION

The ILO at Concordia was placed in a very difficult position. The ILO was expected to carry out all duties related to any form of industrial linkage yet there were no established priorities. The ILO then attempted to perform all these functions on a very limited budget. This limited support for industrial interaction has done nothing to create the climate which was expected or desired. I feel it is opportune with the review of the ORS and the ILO to revamp the effort and send the message to the research community that Concordia wishes to support industrial and commercialization activities and that it is intent on doing so. The major problem of course is the lack of financial resources available to dedicate to the task.

I have attempted to focus on how to maximize the use of the available resources yet provide focus and direction so as to improve the overall level of service. The administration of grants and contracts should benefit from a common support infrastructure which is in place for the ORS. Given the lack of infrastructure within the ILO, and considering contracts should be placed in the control of the ORS, it then is only practical to place the remainder of the current ILO functions within the ORS.

Firm leadership will be needed within the ORS and any territorial lines between the ILO and the ORS should be eliminated. All members of the ORS, including the Director, Industrial Liaison should operate out of the same facility and communication among all

groups within the ORS has to be enhanced.

This report is not meant to be critical of the current ILO staff. Given the lack of resources and support and direction from the University, I think not much more could have been achieved. However, the University now has the opportunity to provide direction, focus and the structure to maximize the resources available to be devoted at this time to industrial interaction and technology transfer activities. It now also has the opportunity to confirm support for these activities and to show the University community that it is taking action to improve the current situation.

## APPENDIX 1

### REVIEW OF THE INDUSTRIAL LIAISON OFFICE CONCORDIA UNIVERSITY

#### INTERVIEW LIST

#### EXTERNAL EVALUATOR VISIT

Dr. G. Joos, Electrical and Computer Engineering

Dr. R. Le Van Mao, Chemistry and Biochemistry

Ms. A. Williams, Director, Office of Research Services

Dr. E. Besso, Associate Director, Office of Research Services

Dr. T.D. Bui, Vice-Rector, Academic (Research)

Ms. N. Plant, Assistant to the Director, ILO

Dr. S. Hoa, Mechanical Engineering

Dr. S. Kubina, Electrical and Computer Engineering

Mr. Roch Prud'Homme, Director, ILO

Dr. P. Anderson, Biology

**EXTERNAL ASSESSMENT**  
**FOR**  
**THE INDUSTRIAL LIAISON OFFICE**  
**AT**  
**CONCORDIA UNIVERSITY**

By: Denis N. Beaudry  
Director  
Centre de développement technologique  
École Polytechnique de Montréal

March 4, 1994

## **PREAMBLE**

This assessment must be read bearing in mind that my mandate as an external assessor was as follows:

- to study and comment on the auto-appraisal prepared by the Concordia Industrial Liaison Office (ILO);
- to meet with a few (3-5) people to obtain their views on, and expectations of, their ILO;
- to prepare a brief assessment and give appropriate recommendations.

This report does not therefore constitute an exhaustive study of the situation, but addresses the key issues noted.

## **TERMS OF REFERENCE**

The documents listed in Appendix A have been consulted, and meetings were held with the people listed in Appendix B.



## 1 - INTRODUCTION

The funding of research in universities has evolved considerably in the last decade, particularly over the last five years.

Not too long ago, university researchers in the Province of Quebec obtained most of their research funds from government councils such as NSERC and FCAR.

In 1994, NSERC and FCAR grants are still of prime importance, as they set, more or less, the standard of excellence for university research.

However, the granting councils have set up more and more research programs for which the participation of an industrial partner in a research project is a prerequisite. Not only that, but all additional monies given by the government to the granting councils over the last five years have been tagged for university-industry programs.

In addition to the funding of the councils, governments have also put in place new programs to fund research carried out by university and industry in collaboration. Programme SYNERGIE, the Projets mobilisateurs (F.D.T.), the Projets F.D.T.R. - Environnement, and the R+D tax incentives are all such programs that have been set up by the government of Québec. At the federal level, NSERC has established the Network of Centres of Excellence Program and has strongly encouraged the development of the NSERC Industrial Chair and R+D Cooperative Programs.

At both levels of government, a considerable amount of money is being spent on research programs within the departments. Large R+D budgets are available in the Departments of Energy, Mines and Resources (CANMET), Communications (CRC), Transport, Environment and National Defense and in the Canadian Space Agency, the National Research Council etc...

The Quebec government also funds research through the Ministères des Transports, de l'Environnement, de l'Énergie et des Ressources, de l'Industrie, du Commerce, de la Science et de la Technologie, and through technology transfer centres (CRIM, CQVB, CERCA, INO, CEFRIO etc.).

In order for the university to gain access to these funds, the prerequisite is always the same: the university has to conduct its R+D in collaboration with industry !

I feel that listing R+D funding sources is important in order to convey the message that in 1994, the funding of research at the university level is largely influenced (and will remain so in my opinion) by the capacity of the university to build partnerships with the private sector. The funding of research is not strictly a question of grant research and contract research; it is also a question of partnerships, alliances and joint ventures between universities and the private sector.

The benefits that will derive from this new mode of research funding are very important to universities:

- additional funding for research
- support for graduate students
- acquisition of new equipment
- additional funds to cover indirect costs of research
- capacity to attract the best students
- etc.

For these reasons, the Industrial Liaison Office of a university should be given a mandate with clear objectives and adequate resources (budget, space and resources).

## 2 - MISSION STATEMENT AND MANDATE

The mission statement of the Office of Research Services, at Concordia University (hereinafter referred to as the ORS) includes the activities (Appendix C) to which the Industrial Liaison Office (ILO) is dedicated in the sense that «the ORS is committed to enhancing the research mission of the University by (among other activities):

- providing support in the preparation of proposals, the negotiation of contracts and the facilitation of technology transfer.»

These general terms, in my opinion, can be interpreted as representing the role of the ILO restricted to research contract activities. Note too, that the word «industry» is totally absent from the ORS overall mission statement.

In view of my previous appraisal vis-à-vis the R+D funding situation, I would highly recommend that a specific mandate be given the ILO that would derive from the mission statement of the ORS. This mandate could include: «the development of relations with industry to enhance:

- research contracts
- partnerships, alliances and joint ventures favouring the conducting of research activities
- technology transfer.»

A specific mandate would enlarge the role of the ILO to the extent that it would be either responsible for or deeply involved in all aspects of the relations between Concordia University and industry for the funding of research. As a consequence of these changes, the ILO would also be responsible for or at least would coordinate, research projects funded through NSERC Industrial Chair, NSERC, R+D Cooperative, F.D.T., SYNERGIE Programs etc...

This extended mandate would clearly define the role of the ILO as not being restricted to contract research with industry but as including all phases of the research relationship between Concordia University and industry. As such, the role of the ILO would be associated more with the development of research, and would be perceived as active in this respect, rather than as marginal to the university's primary activities.

Several people interviewed, including the Director of the ILO, mentioned the ambiguity that currently exists regarding the respective roles of the ORS and the ILO and, emphasized the need to clarify the situation.

### **3 - THE ILO CURRENT ACTIVITIES**

#### **3.1 - Contract research**

Research contracts activities have decreased considerably during recent years. Contracts totalled \$1.9 million in 1989-90, \$1.6 million in 1990-91, \$1.3 million in 1991-92 and \$0.5 million in 1992-93. According to the ILO Director's latest forecast, contracts should reach \$1.2 million in 1993-94.

Most people interviewed felt that this level of activity does not reflect Concordia's capabilities. The situation raises even more questions when you consider that other vehicles of collaboration with the private sector (R + D Cooperative and Industrial Chair Programs, SYNERGIE, public funding etc.) have not developed either.

The final analysis of this situation is the responsibility of the Review Committee of the ILO. However, a fair judgement of the performance of the ILO with regard to research contracts will only be possible after a clear mandate and appropriate resources have been given to the ILO. At the present time it appears that many factors have had an influence on the funding of research contracts.

### **3.2 - Patents and licensing**

This technology transfer activity (patenting and licensing) is perceived by its Director as an important function of the ILO. Most universities, however, have found that it can be very costly and time-consuming. From an analysis of the ILO's resources (personnel and budget) and considering that the principal mandate of the ILO is related to the support of research activities, I would strongly recommend that patent and licensing be removed completely from the responsibility of the ILO as, in order to be efficient in this area, the university normally has to devote considerable resources to it and capitalize on a large portfolio of inventions, which does not seem to be the case at Concordia University.

### **3.3 - Representation and Communications**

An important function of any ILO Director is to be present and active in the external R+D community and, more particularly, in the industrial R+D community. Requests to participate in various committees and association activities, to attend conferences and workshops and to play an active role as a university representative are usually numerous and these commitments are normally very demanding.

At the same time, the Director of an ILO is expected to be present and available to meet and discuss with university professors and researchers in order to become familiar with the available expertise and technology development potential.

When human resources are very limited, therefore, a Director of the ILO has to be very selective in his involvement with the external R+D community.

It seems that the present Director of the ILO has been spending (or has been asked by the University to spend) too much of his time in such external activities, considering the limited resources of the ILO and the indirect impact on the development of research contracts and other types of research funds.

I would recommend that the Director of the ILO, the Associate Vice-Rector, Academic (Research), and the Director of the Office of Research Services agree to define very specifically the participation of the Director of the ILO as the University representative in such external R+D activities.

#### **4 - POLICIES AND PROCEDURES**

##### **4.1 - University overhead**

The university overhead charged in research contracts (and other type of cooperative agreements) is aimed at covering the university indirect costs associated with the undertaking and conducting of research projects.

Sharing of the university overhead paid on contracts represents a very high incentive for professors who become involved in such activities. Revenues derived from sharing the overhead often constitute development funds for researchers and faculty members and also permit a certain degree of financial freedom. At the École Polytechnique for example, the policy on distribution of the overhead has largely contributed to its success in working with the private sector.

An important portion of the budget allocated by the University to the ILO should also come from the overhead obtained on contracts. The sharing of the overhead revenues with the ILO has an impact on the motivation of the people involved in obtaining these revenues, but also permits the University to fund, to a certain extent, the ILO in accordance with its performance.

I recommend that the distribution of overhead on contracts be reviewed in order that the ILO and the researchers receive a portion of this overhead.

#### **4.2 - Signing authority**

Some degree of authority for signing research contracts should definitely be given to the Director of the ILO. This would have a positive impact on the motivation of ILO personnel and should also expedite contract administration. Furthermore, it would demonstrate that a certain degree of responsibility has been conferred by the University to the ILO.

#### **4.3 - Contracts credited to Concordia**

Some people interviewed felt that a certain number of research contracts were held directly by faculty members at Concordia and therefore not administered through the University structure. I would not know whether this observation is correct or if it is more a problem of perception of the situation.

With my twenty-two years of personal involvement in management of R+D at the university level, I am inclined to think that the perception of such a problem is often taken as reality. For this reason, the issue should be addressed seriously by the ILO Review Committee to ensure that faculty members working through the University structure (ILO) are not being penalized relative to individuals conducting research on their own, using University resources (personnel and facilities).

### **5 - ORGANISATIONAL STRUCTURE**

The Auto-Evaluation prepared by the ILO has proposed as the «principal and most important recommendation (p.27)», that the organizational chart be changed in order to permit the ILO to report in future directly to the Associate Vice-Rector, Academic (Research), instead of to the Director of the ORS.

This issue was discussed with all those interviewed and they unanimously agreed that the ILO should remain on the organizational chart of the ORS. The following reasons were cited: a) the ILO is too small (2 people) to become an administrative unit; b) the ILO has not yet been fully accepted in the community; c) research is research: there is no need to duplicate structures!

However, it is obvious in my opinion that, in order to fulfil its present mandate, the ILO needs to acquire more freedom of action and more autonomy.

I recommend that the ILO remains as a section of the ORS with a clear mandate, a separate budget and greater authority (signing and administration of research contracts).

## **6 - RESOURCES**

### **6.1 - Personnel**

I view of the ILO with a larger mandate in the future. It appears to me that the ILO is currently too short-staffed to undertake this new mandate. Should Concordia University elect to enlarge the present mandate of the ILO to include the development of Industrial Chairs, R+D Cooperative projects, SYNERGIE Program etc..., the ILO will require one additional professional (full-time). Furthermore, despite the decision to be taken regarding the mandate of the ILO, it appears to me that a) the present Director spends (or is being asked to spend) too much time involved in para-university activities, and b) the ORS should take immediate action to furnish the ILO with improved research contract administrative support, mainly for invoicing.

In the future, any further staffing for the ILO should only be considered if there is a significant increase in research activities that fall within the scope of the new mandate.

### **6.2 - Budget**

An appropriate budget should certainly be awarded to the ILO so that it can carry out its revised mandate adequately. In addition to the salaries of three professional, an operating budget of \$35 000 - \$40 000 seems adequate for the current operations, including the cost of some travel, public relations activities, publicity, legal advice etc...



Also, the administrative process of the ILO budget should be clearly defined, and, the budget should be administered directly by the Director of the ILO.

### **6.3 - Space**

The ILO is currently located within the ORS and occupies one office plus little extra space in an open corridor. With additional staff, this space will certainly not be sufficient. New space should be allocated for the ILO activities. The ILO plays a major role at the interface between Concordia University and industry. To attract industry in participating in the development of technology via joint research projects requires a business approach. Proper allocation of space will contribute to the image of the importance of this activity at Concordia University.

## **7 - CONCLUSIONS**

The university-industry relationship is here to stay. In order to develop, it must be nurtured with results that can be used by industry. To change the culture, action must be considered in several areas by the University's senior management. Strong endorsement of the collaboration with the private sector should be clearly perceived by the community. Senior management of the university has to maintain dialogue with the senior management of the companies.

The ILO has a very important role to play in the development of research, and not only contract research. The best contribution of the ILO to this change in culture would be to make the ILO highly efficient. Success breeds success!

The ILO should therefore be given a clear mandate, relative autonomy and sufficient resources (personnel, budget and space) and be accountable.

The ILO must contribute to the development of research in the university, and consequently to the training of the students.

## **- APPENDIX A -**

### **Documents consulted:**

- **Contribution à l'évaluation de O.R.S. / Concordia  
-Commentaires de Marc Blain /UQAM (9 avril 1992)**
- **O.R.S. Report of the Review Committee (May 7, 1992)**
- **Report of External Assessor for O.R.S., by Art Headlam (June 18, 1992)**
- **Concordia - Review Committee of the ILO - Minutes**
  - **Meeting of October 25, 1993**
  - **Meeting of November 29, 1993**
- **O.R.S. - Mission Statement**
- **ILO - Auto-evaluation report (September 21, 1993)**
- **Rapport annuel / Université Concordia (1991-1992)**
- **Annual report / Faculty of Engineering and Computer Science (1991-1992)**

**- APPENDIX B -**

**List of persons interviewed.**

- |                                 |  |
|---------------------------------|--|
| <b>1 - Dr Tien D. Bui -</b>     | <b>Associate Vice-Rector,<br/>Academic (Research)</b>        |
| <b>2 - Mr Roch Prud'homme -</b> | <b>Director<br/>ILO</b>                                      |
| <b>3 - Mrs Nannette Plant</b>   | <b>Assistant to the Director<br/>ILO</b>                     |
| <b>4 - Dr V.S. Hoa</b>          | <b>Professor<br/>Mechanical Engineering</b>                  |
| <b>5 - Mrs Audrey Williams</b>  | <b>Director<br/>O.R.S.</b>                                   |
| <b>6 - Mrs Erica Besso</b>      | <b>Associate Director<br/>O.R.S.</b>                         |
| <b>7 - Dr Tadeusz Krepec</b>    | <b>Professor<br/>Mechanical Engineering</b>                  |
| <b>8 - Dr Donat Taddeo</b>      | <b>Dean, Faculty of Engineering<br/>and Computer Science</b> |

OFFICE OF RESEARCH SERVICES

MISSION STATEMENT

The Office of Research Services is dedicated to providing the professional services required to encourage and support the development, evolution and expansion of funded research and scholarly activities at Concordia University. We are committed to enhancing the research mission of the University by:

- ensuring that all internal and external policies, procedures and guidelines affecting research activities at Concordia University are known, understood and considered in a coordinated manner;
- making known to the internal academic community all potential sources of funds;
- developing an approach to research and scholarly activities that will enable the University to take full advantage of internal strengths with existing and emerging external opportunities;
- providing support in the preparation of proposals, the negotiation of contracts and the facilitation of technology transfer;
- administering grants and contracts; and
- raising the profile of research within the University by actively promoting and advertising, both internally and externally, the accomplishments of the research community at Concordia University.